

PATENT COOPERATION TREATY

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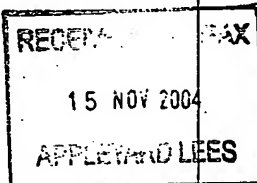
From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

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To:

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WRITTEN OPINION
(PCT Rule 66)

Date of mailing
(day/month/year) 15.11.2004

Applicant's or agent's file reference
DPW/Y2395

REPLY DUE within 3 month(s)
from the above date of mailing

International application No.
PCT/EP 03/13889

International filing date (day/month/year)
08.12.2003

Priority date (day/month/year)
20.12.2002

International Patent Classification (IPC) or both national classification and IPC
C07F7/18

Applicant
SIGMA COATINGS B.V. et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 20.04.2005

Name and mailing address of the international preliminary examining authority.



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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-21 as originally filed

Claims, Numbers

1-30 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
 - ☐ the claims, Nos.:
 - ☐ the drawings, sheets:
5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

WRITTEN OPINIONInternational application No. **PCT/EP 03/13889**

Novelty (N)

Claims 1-25, 27-30 (Yes), 26 (No)

Inventive step (IS)

Claims 1-25, 27-30 (Yes), 26 (No)

Industrial applicability (IA)

Claims 1-30 (Yes)

2. Citations and explanations**see separate sheet**

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Cited documents

The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: US-A-6 084 116 (MONKIEWICZ JAROSLAW ET AL) 4 July 2000 (2000-07-04)
- D2: DE 12 57 432 B (DOW CORNING A G) 28 December 1967 (1967-12-28)
- D3: GB-A-1 130 074 (GEN ELECTRIC) 9 October 1968 (1968-10-09)
- D4: US-A-4 556 725 (KANNER BERNARD ET AL) 3 December 1985 (1985-12-03)
- D5: US-A-4 379 766 (MACK MARK P ET AL) 12 April 1983 (1983-04-12)
- D6: US-A-3 974 198 (ASHBY BRUCE A) 10 August 1976 (1976-08-10)
- D7: EP-A-0 837 067 (HULS AMERICA INC) 22 April 1998 (1998-04-22)
- D8: US-A-5 387 706 (RASMUSSEN EDWARD T ET AL) 7 February 1995 (1995-02-07)
- D9: US-A-4 116 935 (KISHIMOTO KEIICHI ET AL) 26 September 1978 (1978-09-26)

2 Novelty (Art. 33(2) PCT)

The present application relates to a method of preparation of acyloxysilanes.

D1 relates to process for the preparation of acetoxysilanes comprising: (i) reacting at least one chlorosilane with acetic acid in a medium containing acetyl chloride and a catalyst, and removing the hydrogen chloride which is formed during the reaction; (ii) reacting the reaction mixture from step (i) with acetic anhydride; and (iii) separating and obtaining the product acetoxysilane.

D2 describes the preparation of acyloxysiloxanes by reacting an organosiloxane with the anhydride of a monocarboxylic acid at above 50 °C.

D3 relates to organosiloxanes containing silicon-bonded acyloxy radicals.

D4 relates to a low temperature process for the preparation of triacetoxysilanes from acetic anhydride and tris(amino)silanes.

D5 relates to the production of silyl esters of carboxylic acids under mild conditions in the presence of phase transfer catalysts by contacting a silicon halide with a carboxylic acid salt.

D6 relates to a process for producing acyloxysilane carrying out the reaction of a chlorosilane with a carboxylic acid or an anhydride in the presence of an iron complexing agent.

D7 relates to the preparation of acyloxysilanes by the anhydrous reaction of a carboxylic acid with a mixture of a halosilane and a silazane.

D8 relates to a process for the preparation of acyloxysilanes. The process comprises contacting a chlorosilane with a carboxylic acid in a film forming an equilibrium mixture of acyloxysilane and hydrogen chloride. The film is heated at a temperature sufficient to cause vaporization of the hydrogen chloride from the equilibrium mixture thereby increasing the yield of acyloxysilane in the equilibrium mixture.

D9 relates to a composition of matter which is curable at room-temperature in the presence of moisture which consists of a hydroxylated polyorganosiloxane and a novel cross-linker which is a mixture of an hydroxylated polysiloxane and an acetoxysiloxane.

Documents D1 (examples 1, 2), D2 (examples 1-4), D3 (examples 1, 2), D4 (examples 1-5), D5 Examples 1-5), D6 (examples 1-5), D7 (examples 1-6), D8 (examples 1-5), D9 (example 1) describe compounds which fall under the scope of claim 26. Therefore claim 26 does not meet the requirements of Art. 33(2) PCT.

None of the cited documents describes a process for the preparation of silyl carboxylates by reaction of a carboxylic acid with a hydroxy or an alkoxy silyl derivative. Claims 1-25, 27-30 meet the requirements of Art. 33(2) PCT.

3 Inventive step (Art. 33(3) PCT)

D8 is considered to represent the most relevant prior art.

The problem underlying the present application is to be regarded as to provide an alternative process for the production of acyloxysilanes.

None of the documents, nor a combination of the teaching thereof would fairly suggest that acyloxysilanes can be prepared by reacting a carboxylic acid with a hydroxy or an alkoxy silyl derivative.

Claims 1-25, 27-30 meet the requirements of Art. 33(3) because the subject-matter of said claims involves an inventive step.

4 Industrial applicability (Art. 33(4) PCT)

The subject-matter of claims 1-30 is considered to be industrially applicable.

5 Clarity (Art. 84 EPC)

Claim 27 refers to the description and therefore does not meet the requirements of R. 6.2(a) PCT.

Although claims 1 and 27 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, claims 1 and 27 do not meet the requirements of Article 6 PCT.

The vague and imprecise statements (p. 20 l. 20 to p. 21 l. 7) imply that the subject-matter for which protection is sought may be different to that defined by

the claims, thereby resulting in lack of clarity of the claims (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).

The use of terms like "etc." or "and the like" in the description (p 8 I 1, p 12 I 24, p 13 I 9, 22, p 14 I 15, 21, 29, claim 11, claim 30) are rendering the scope of the claims vague when interpreting them in the light of the description (Article 6 PCT).

The term "silaphilic catalyst" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 EPC). Furthermore, the Applicant incorporated also Lewis acid catalyst under this term.

The Applicant's attention is drawn to the fact that phrases referring to documents like "herein incorporated by reference" (paragraph 2 p 19) are to be deleted when entering the regional phase (EPC guidelines C-II 4.18).

6 Other Defects of the application

The applicant is requested to correct the reference to the European patent publication (p 2 I 10).

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D8 is not mentioned in the description, nor is this document identified therein.